Safety and Health Managers' Conference

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Five Year Retrospective – "framing up" the new millennium

- **Y2K - a threat that didn't quite live up to its expectation**
- **2002, 2005 - changeovers of the NASA Administrator**
- **9/11/2001 - a new threat to infrastructure safety and security**
- **2/1/2003 – Columbia ⇨ CAIB, Stafford-Covey, Diaz, a revisit of safety culture**
- **1/14/2004 - start of the Exploration era - The President**
- **8/2005 - strategic Planning and Governance**
- **9/2005 – Katrina (symbolic of a growing threat to Mission Accomplishment)**
- **2/1/2006 - where are we and how are we to proceed**
  - Values – tweaking
  - Tenets for a new start and acceleration for Exploration

Guiding Principles of NASA's Strategic Management Process

(NPD 1000.0, August 2005)

- Lean Governance
- Responsibility and Decision-Making
- Sensible Competition
- Balance of Power
- Checks and Balances
- Integrated Financial Management
- Strategic Management of Capital Assets
- Strategic Management of Human Capital

Core Values -- 2005

If good strategic planning provides the long-term direction of our Agency, our shared core values express the ethics that guide our behavior. (As an Agency) we value:

- **Safety - NASA's constant attention to safety is the cornerstone upon which we build mission success. We are committed, individually and as a team, to protecting the safety and health of the public, our team members, and those assets that the Nation entrusts to us.**
- **Teamwork - NASA's most powerful tool for achieving mission success is a multi-disciplinary team of competent people. The Agency will build high-performing teams that are committed to continuous learning, trust, and openness to innovation and new ideas.**
- **Integrity - NASA is committed to an environment of trust, built upon honesty, ethical behavior, respect, and candor. Building trust through ethical conduct as individuals and as an organization is a necessary component of mission success.**
- **Mission Success - NASA's reason for being is to conduct successful space missions on behalf of this Nation. We undertake missions to explore, discover, and learn. And we believe that mission success is the natural consequence of an uncompromising commitment to safety, teamwork, and integrity.**

Note: "NASA Family" (nee "People") and Excellence replaced.

Safety as an Agency Core Value

- ***We are committed, individually and as a team, to protecting the safety and health of the public, our partners, our people, and those assets that the Nation entrusts to us.***
- ***Safety is one of a triad of values upon which we build mission success***

Figure 2.0-1 - NASA is committed to a core set of values in everything it does.

Everyone is <u>Responsible</u> for safety.

Further, anyone who is accountable for mission success is also <u>Accountable</u> for safety given the constraints of assigned <u>Authority</u> and <u>Capability</u>

Accountability = R x A x C

A Columbia Root Cause Discussion

NASA exhibited "cultural traits and organizational practices detrimental to safety":

- *reliance on past success*
- *organizational barriers to effective communications*
- *lack of integrated management*
- *informal decision-making processes*

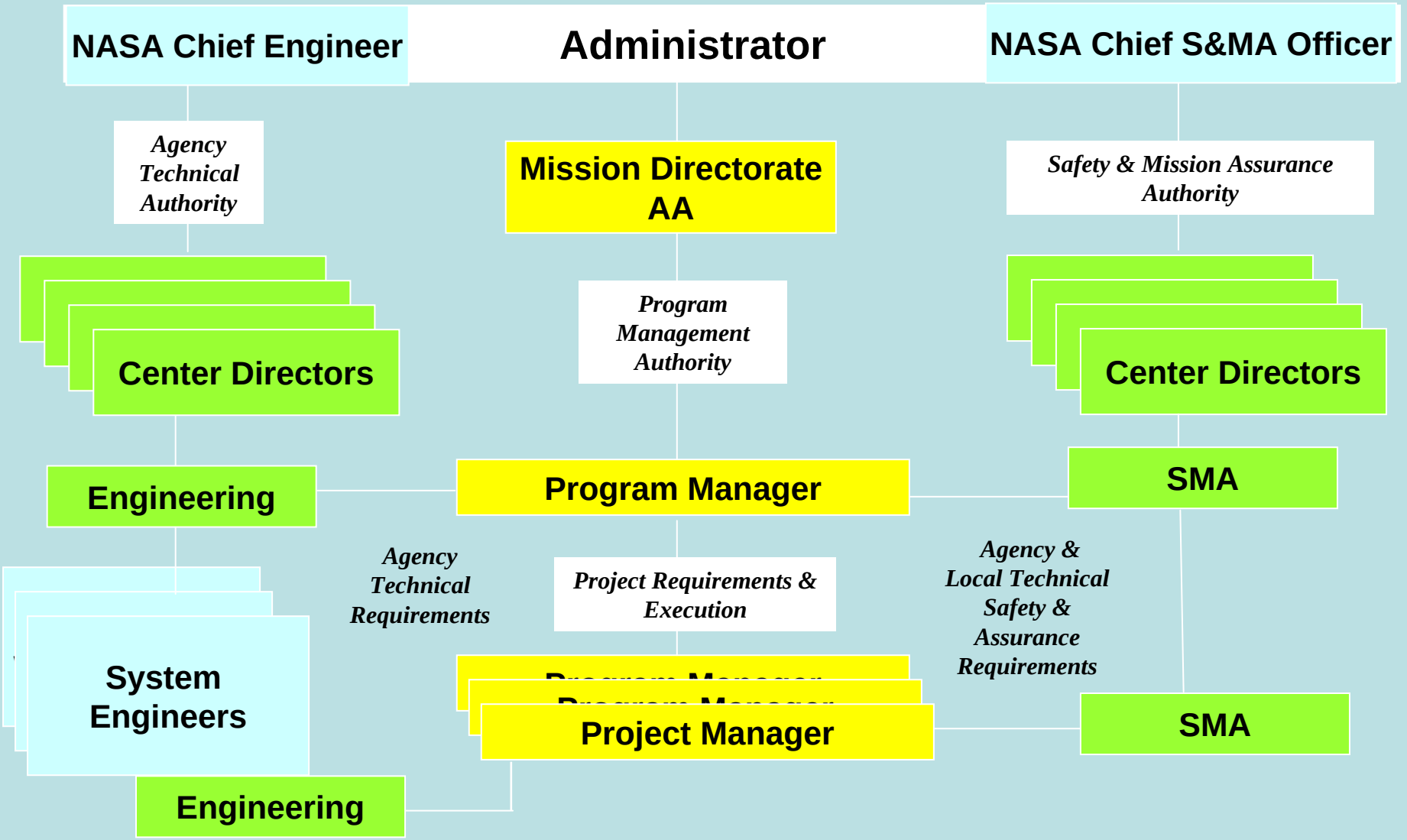
CAIB Recommendations for countering these practices based on several principles (ref. Chapter 8):

- *Leaders create culture. It is their responsibility to change it.*
- *Changes in culture should be made only with careful consideration to their effects on the system and their possible unintended consequences.*
- *Strategies must increase the clarity, strength, and presence of signals that challenge assumptions about risk.*

The Culture Correction Initiative

- **The Problems**
  - As decision-makers we too often "kill the messenger"
  - As messengers, we too often lack professional integrity
  - As leaders, we too often come across as non-supportive and unresponsive
- **Phase I of the NASA Culture Initiative facilitation by BST, Inc. completed**
  - Tested at 3 centers with some preliminary feedback
    - Fewer messenger slayings
    - More professional integrity in our messengers
    - Our people admit our leaders are trying
- **Phase II was just underway across the agency when the BST, Inc. contract was foreshortened in Spring 2005**

R. 9.1-1 --The Organizational Initiative (Balance of Power/Checks and Balances)
Technical Authority, Programs, Centers



More emphasis on System Safety Engineering

- **"Technical authority" will be administered *independent* of the program**
- **The *Chief Engineer* oversees the application of Agency technical authority**
- **The engineering community will be held more accountable for a major role in system safety engineering *(every engineer a safety engineer)***
  - Own safety related technical requirements
  - Actively participate in system safety engineering tasks
  - Provide the program "technically acceptable" alternatives
  - Accountable for system safety results (within scope)
  - Design engineers: Do not throw system safety engineering over the fence to the system safety engineers
- **The role of SMA organizations might be to *facilitate, coach, train, and assure* all of the above**

Current OSMA Strategic Initiatives

- **Requirements and Rules:**
  - **Major ongoing effort to update policy directives: *"Say what we do"***
  - **Work closely with Chief Engineer on rules "ownership" and reinvigoration of standards**
- **Audit and Assessment:**
  - **Unprecedented benchmarking has helped us redefine technical and institutional audit processes: *"Do what we say"***
  - **SMA is biggest per capita user of NESC for technical assessment to date**
- **Tools:**
  - **Working with academia and industry to improve process and technology for SRM and Q disciplines**
  - **Establishing a PRA model for design reference CEV (an initiative led by Ralph Roe to renew NASA civil service involvement in design to reestablish smart buyer capability).**
- **Agency Safety Initiative - Marketing**

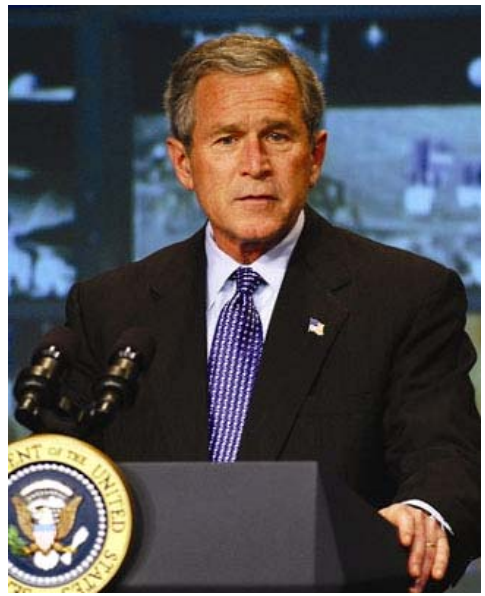
Aerospace Safety Advisory Panel (ASAP)

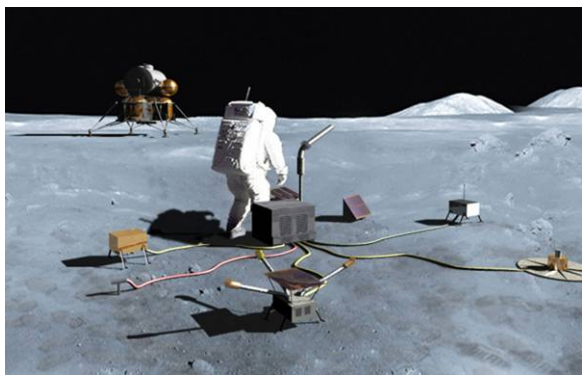
- **Reconstituted in 2003 to reflect its original 1968 charter for strategic oversight of safety program implementation within NASA**
  - Two year terms for members
    - New additions recently strengthened insightful technical safety oversight capability
  - Charter -- review, evaluate, and advise on elements of NASA's safety and quality systems, including industrial and systems safety, risk management and trend analysis, and the management of these activities.
- **Four meetings annually – this year at KSC, JPL, HQ/GSFC and MSFC (this week)**
- **Foci –**
  - Leadership and succession planning as a key in managing the competent skill base.
  - Independent technical authority
    - Who, what , where, why, when and how… Looking for objective evidence
  - Safety culture progression
  - Safety metrics
  - Employee/agency awareness of mishaps and root cause and corrective attention
  - Employee awareness of and adherence to safety and health requirements
  - Close call reporting and investigation/analysis (attack precursor events)
  - Prime and subcontractor safety performance and behavioral expectations.

See http://www.hq.nasa.gov/office/codeq/asap/annrpt.htm

A National Vision for Space Exploration

- Complete the International Space Station
- Safely fly the Space Shuttle until 2010
- Develop and fly the Crew Exploration Vehicle no later than 2014 (goal of 2012)
- Return to the Moon no later than 2020
- Extend human presence across the solar system and beyond
- Implement a sustained and affordable human and robotic program
- Develop supporting innovative technologies, knowledge, and infrastructures
- Promote international and commercial participation in exploration





"It is time for America to take the next steps.

Today I announce a new plan to explore space and extend a human presence across our solar system. We will begin the effort quickly, using existing programs and personnel. We'll make steady progress – one mission, one voyage, one landing at a time"

President George W. Bush – January 14, 2004

The Exploration Vision in a Nutshell

- **As a "nation of explorers," and "this nation's space explorers" we will:**
  - Understand and fix the debris shedding and Return the Shuttle to flight
  - Use Robots and *two* Space Stations to get us ready for Mars
    - Robotic precursor missions (Moon and Mars)
    - Complete ISS assembly (now 18 assembly and utilization flights remain)
    - Outfit the moon (assembly completed previously by another "Agency")
  - Retire the Shuttle in 2010…
  - Fly people to Mars to look for life
  - Beyond….
- **There will, by definition, be risk…**

Setting a bias for Safety and Mission Accomplishment: not a new expectation!

To your own discretion therefore must be left the degree of danger you risk, and the point at which you should decline, only saying we wish you to err on the side of your safety, and to bring back your party safe even if it be with less information

Thomas Jefferson, in his 1803 letter authorizing the Lewis and Clark expedition